Zadatak 27. Ako je $x+y=\frac{\pi}{2}$, $x\neq 0$, koliko je $\frac{\operatorname{tg}(x-y)}{\operatorname{tg}x-\operatorname{tg}y}$?

Rješenje.

$$\frac{\operatorname{tg}(x-y)}{\operatorname{tg}x-\operatorname{tg}y}=\frac{1}{\operatorname{tg}x-\operatorname{tg}y}\cdot\frac{\operatorname{tg}x-\operatorname{tg}y}{1+\operatorname{tg}x\cdot\operatorname{tg}y}=\frac{1}{1+\operatorname{tg}x\cdot\operatorname{tg}\left(\frac{\pi}{2}-x\right)}=\frac{1}{1+\operatorname{tg}x\cdot\frac{\sin\left(\frac{\pi}{2}-x\right)}{\cos\left(\frac{\pi}{2}-x\right)}}$$

$$=\frac{1}{1+\operatorname{tg}x\cdot\frac{\cos x}{\sin x}}=\frac{1}{1+\operatorname{tg}x\cdot\operatorname{ctg}x}=\frac{1}{1+1}=\frac{1}{2}.$$